Overview of the "SC7000 Expert Publisher"

The "SC7000 Expert Publisher" is RISO's top-of-the-line multi-functional, high-speed publishing system. The SC7000 System Controller enables users to print a wide variety of applications directly from their computers, in a direct-connect or networked environment, to the Risograph digital printer at speeds up to 130 prints per minute, on a variety of paper sizes and weights, and in over a dozen different colors.

Desktop publishing gives users the freedom to create and change documents easily and RISO's SC7000 Publisher gives them the power to print those documents from the Risograph with speed and efficiency never before possible. From simple text to complex PostScript files, the SC7000 is a high-speed Raster Image Processor (RIP) that processes data from a PC/compatible or a Macintosh/compatible quickly and easily.

Let's take a look at some of the features the SC7000 offers:

Adobe PostScript Level II

The SC7000 is a certified Adobe™ PostScript™ Level II device, assuring accurate printing of PostScript fonts, fast printing of bitmaps, and improved halftone reproduction. Since it is true PostScript and not an emulation, there is never a question of compatibility, so fonts and graphics print easily. And because the SC7000 incorporates certified Adobe PostScript, future PostScript upgrades will be timely. The SC7000 is compatible with the most common printer languages -- PCL5, PCL5e, and Adobe PostScript Level II.

PC and Macintosh Compatible

The SC7000 works with both IBM PC's and Apple Macintosh™ computers, so there is no further hardware investment necessary. The SC7000 analyzes the incoming data stream and uses the correct interpreter to print the job so that multiple users on different computer platforms can easily send jobs through the SC7000. Its Autoswitching feature automatically detects the platform to which it is printing.

RISO Printer Driver

The SC7000 uses its own RISO Printer Driver, which supports all Risograph paper sizes and applicable Risograph features.

RISO Print Dialog Box

This feature, accessible through the Print menu in software applications, gives the user the ability to control Risograph panel settings, like print speed, print density, sorter mode, etc. directly from the computer, saving time and increasing productivity, while enhancing network printing convenience.

300 MB Hard Drive and 16 MB Standard Memory

The SC7000 provides 300 MB of usable hard disk space for downloading commonly-used, non-resident fonts for faster printing. Plus, the SC7000's 16 MB of memory supports printing up to 11" x 17" documents. Its memory is expandable up to 64 MB to increase print speed in complex print jobs.

RISO Utility Software Program

RISO's Utility software lets the user create customized power-up default settings on the SC7000. Users can specify settings for print speed, print density, auto print, sorters, confidential mode, installed print cylinder size, and more. And RISO's Utility Program makes it easy to manage font space on the hard drive and print SC7000 settings and font listings pages.

Built-in Ethernet connection for Local Area Networks

The SC7000 network port connects to AppleTalk and TCP/IP Ethernet networks and offers three connectors – RJ-45, BNC, and AUI, enabling connection to a number of different network configurations.

Input Scanning Capability

The SC7000 provides TWAIN scanning support, which allows for input scanning TIFF images from within a TWAIN-compatible software application. A standard Adaptec AHA-1540 SCSI Board has to be installed in the PC in order to scan. This can be ordered from RISO or any computer store that carries it. The Macintosh comes standard with a built-in SCSI board so it is not necessary to purchase an Adaptec Board.

Workflow Features

The SC7000 has features that increase workflow productivity when printing to the Risograph. Duplexing and color printing are easy with the Print Odd/Even Pages and Pause Before Master features. Auto Print can be turned on or off for each individual print job, and up to nine Proof Copies can be made for each individual job.

The SC7000's array of powerful, technical innovations provide increased productivity, enhanced networking capabilities, and greater flexibility for printing sophisticated graphics. It is the perfect printing solution for the print-for-profit market and graphic design professionals that need the high-speed, versatile printing capabilities of the Risograph combined with the power of the SC7000 System Controller to quickly and easily print an array of documents, from simple text to complex graphic files.

SC7000 Features, Advantages, and Benefits

The Risograph SC7000 Expert Publisher has all of the standard Risograph features and benefits, plus the additional ones listed below:

Feature	Advantage	Benefits
IBM PC and Power Macintosh Compatible	Flexible connectivity. Enables you to connect both an IBM PC/compatible or an Apple Power Macintosh or compatible.	Can perform as a printer for a variety of computers. Reduces the need for new equipment or software. Reduces training time. Saves money.
Certified Adobe PostScript Level II	100% compatibility with all PostScript/TrueType fonts and applications. Faster bitmap printing. Improved halftones.	Assured compatibility with current and new fonts and software. Ability to keep up with upgrades. Improved productivity. More pleasing photographs.
Auto switching among Parallel, RS-232, and Ethernet communication ports - All ports and protocols are active - Connect and feed data to and from ports at same time	System controller detects the active port and protocol and transfers the information correctly without operator intervention.	Easy installation. Saves time. Increases reliability by automatically recognizing the active port. Eliminates operator error.
Auto switching between PostScript and PCL languages	System controller analyzes the incoming data stream and uses the correct interpreter to print the job.	Easy installation and configuration. Increases versatility, reliability, and productivity.

SC7000 Features, Advantages, and Benefits (continued)

Feature	Advantage	Benefits
35 PostScript (Windows and Macintosh) and 45 LaserJet (Windows) fonts for a total of 80 resident fonts	Wide selection of internal PostScript and PCL fonts. More accurate emulation of HP LaserJet III and 4V laser printers.	Duplicate most popular printer fonts. Fonts increase flexibility for greater output variety. Reduces need to purchase additional fonts.
Automatic Interface Mode	The Interface (I/F) button automatically engages when interfaced with system controller.	Network friendly. Easy, trouble-free operation as it maintains a constant connection between system controller and Risograph.
RISO Print Dialog Box	Allows user to change Risograph settings from the computer from within the Print menu of any application. Settings include: • Print Speed • Print Density • Confidential • Sorter Mode • Auto Print • Proof Copies • Pause Before Master • Print Even/Odd Pages • ABS Screening • Photo/Line/Duo • Paper Sizes	Network printing convenience. Saves time as Risograph setting changes can be made at the computer. Increases productivity. Minimizes the need for additional steps between first and final copies when adjusting print speed and/or density. Makes Risograph operations, previously inaccessible, available through the computer.
Hard Disk with 300 MB User Space	Able to store and manage additional resident fonts.	Reduces/eliminates need to download frequently-used fonts in graphic-intensive environments. More font options for job requirements.

SC7000 Features, Advantages, and Benefits (continued)

Feature	Advantage	Benefits
Built-in Ethernet Connection	The network port connects to AppleTalk and TCP/IP Ethernet networks and offers three connectors – RJ-45, BNC, and AUI.	Ethernet is the most widely-used Local Area Network (LAN). High-speed network solutions for Power Macintosh and PC.
Input Scanning	Allows user to electronically incorporate images into documents. Store images on disk for future use.	Uses Risograph as a utility scanner. Reduces/eliminates need to recreate images, such as diagrams and logos. Eliminates cut and paste to increase productivity and more professional-looking, customized documents.
TWAIN Scanning Support	Allows the scanning of TIFF images from within the software application.	TWAIN and TIFF represent industry standards for input scanning.
HP LaserJet III and 4V printer emulations	Allows user to print existing DOS application documents.	No need to reformat existing documents.
RISO Utility Software Program	Enables customizing power-up defaults on SC7000, including: • Print Speed • Print Density • Auto Print • Sorter Mode • Confidential • ABS Screening	Easy, fast method to adjust the SC7000's default settings from the computer. Customize power-up defaults to fit specific printing needs. Easy for anyone to use.
16 MB Standard Memory (expandable to 64 MB)	User selected memory options.	Custom design system to meet requirements. Pay only for desired memory, so no unnecessary expense.

Networking with the SC7000

SC7000 Ethernet Connection Ports

The network port of the SC7000 supports Ethernet, which is the most widely-used Local Area Network (LAN).

The SC7000 provides three Ethernet connectors for physical Ethernet cabling: RJ-45, BNC, and AUI. The network port of the SC7000 automatically senses which of the three connectors is being used, but it cannot connect more than one connector to a network at the same time.

Let's briefly discuss each connection:

BNC Connector Port for 10Base2 Cabling

The 10Base2 Ethernet cable system is also known as Thin Ethernet, Thinnet, or Cheapernet. The BNC connector on the SC7000 is used for 10Base2 cabling.

10Base2 is the least expensive way to configure a network because the cabling required is inexpensive, but it is also the least flexible To add additional computers or devices to an established network requires cutting into the 10Base2 cable, which is time consuming.

RJ-45 Connector Port for 10BaseT Cabling

10BaseT is a UTP Ethernet, Unshielded Twisted Pair or Twisted Pair Ethernet, because the cable used consists of twisted wire pairs. The RJ-45 connector on the SC7000 serves as the port for a 10BaseT Ethernet cabling.

The 10BaseT configuration has a hub at the center of the network to which all networked computers are attached. This configuration is the most reliable, because one down computer will not affect others. It is also the most expensive, because hubs are expensive.

AUI Connector Port for 10Base5

The SC7000's AUI connector, Attachment Unit Interface, is intended for 10Base5 Ethernet cable systems. 10Base5 Ethernet is also called Thicknet or Thick Ethernet because it uses a "backbone" of thick yellow or black cable.

The 10Base5 is less expensive than the 10BaseT hub configuration, but a little more expensive than the 10Base2, because the connectors needed to attach networked computers to the 10Base5 cable are more expensive. It is also easier to add computers to the 10Base5. Unlike the 10Base2, it does not require cutting the cable.

SC7000 Network Protocols

What is a protocol? It is a method of standardized communication. For example, when you answer the telephone, you say “hello”. The person on the other end says “hello”. The word “hello” has become the standard protocol for beginning telephone conversations.

The same is true in a computer environment. A network protocol is necessary for computers and networks to communicate with each other. The SC7000 offers two standard communication protocols, which are Ethertalk and TCP/IP.

Let’s briefly discuss each one:

EtherTalk
Ethertalk is the name of AppleTalk for Ethernet networks. It is the standard network of Apple Macintosh and compatible computers, but other computer systems can also run EtherTalk. For example, an NT Server, Novell, and Banyan Vines can also use EtherTalk protocol for networking.

In the early days of Macintosh computers, the AppleTalk protocol was running on a network called LocalTalk, which is considerably slower than EtherTalk because it uses slower hardware. Most newer Macintoshes, including Power Macintoshes, are equipped with an Ethernet interface that allows connection to an EtherTalk network.

TCP/IP
TCP/IP is a network protocol that was initially developed for the Internet. It is the first routable protocol, which enables millions of computers within thousands of networks to communicate with each other. TCP/IP is most widely used among Unix workstations, as Unix will not work with the EtherTalk protocol.

Network Configuration Chart

The following chart provides the information needed to connect the SC7000 to various network configurations at customer sites. This is the information MIS and network managers will need to determine how the SC7000 will work with their particular networks.

How to read this chart:

Network Topology -- refers to the cabling configuration.
Network Operating System -- is the operating system of the network.
Network Protocol -- is the language the network is using.
Recommendation -- is what must be done in order to connect the SC7000 to the network.
Comments -- describes which SC7000 port should be used for connection.

Network Topology	Network Operating System	Network Protocol	Recommendation	Comments
Ethernet: 10BaseT, 10Base2, AUI	Novell NetWare Windows NT Server Apple Macintosh Banyan Vines Other AppleTalk capable	AppleTalk Phase II	Set up an AppleTalk print queue on the network server for the SC7000. Consult network software documentation for instructions.	Cable to 10BaseT, 10Base2, or AUI port on SC7000.
Ethernet: 10BaseT, 10Base2. Token Ring: DB9, RJ45.	Novell NetWare UNIX Windows NT DEC LAT Banyan Vines Other without AppleTalk	IPX/SPX TCP/IP, LPD/LPR TCP LPD OPEN VMS, ULTRIX PCPrint	Use a Print Server Adapter (see chart on next page). Follow the manufacturer's installation instructions.	Cable to parallel or serial port on SC7000.
LocalTalk	Apple Macintosh.	AppleTalk	Use an EtherTalk/LocalTalk converter (see chart on next page). Follow manufacturer's installation instructions.	Cable to matching Ethernet port on SC7000.

EtherTalk/LocalTalk Manufacturers

Note
The manufacturers' information below is provided for your customers' convenience. While RISO believes the information is accurate and the referenced products will function properly and deliver reliable service when used as intended, RISO neither endorses these specific products nor guarantees their function when used in a specific environment. Please have your customers contact the manufacturers at the listed Internet addresses for current information and pricing.

EtherTalk/LocalTalk Converters

Company	Product	Ports	Comments
Asanté Technologies, Inc. www.asante.com	Micro AsantePrint-10T	1 LocalTalk 1 AUI 1 RJ-45	Supports up to 8 LocalTalk devices.
	Micro AsantePrint	1 LocalTalk 1 AUI 1 BNC 1 RJ-45	Supports up to 8 LocalTalk devices.
Dayna Communications, Inc, www.dayna.com	DR0100 PathFinder	1 LocalTalk 1 AUI 1 BNC 1 RJ-45	$759. Supports up to 30 LocalTalk devices.
	EP0431 Mini EtherPrint-T Plus	1 LocalTalk 1 RJ-45	$349. Supports up to 8 LocalTalk devices.
	EP0131 Mini EtherPrint-T	1 LocalTalk 1 RJ-45	$289. Supports up to 2 LocalTalk devices.
Farallon Communications, Inc www.farallon.com	PN842-1 EtherWave Printer Adapter	1 LocalTalk 2 RJ-45	$289. Supports 1 LocalTalk device.
	PN558C-1 EtherMac MultiPrinter Adapter	1 RJ-11 1 RJ-45 1 BNC	$289. Supports up to 8 LocalTalk devices. Includes PhoneNET Connector.
	PN848-1 EtherWave MultiPrinter Adapter	1 RJ-11 2 RJ-45	$339. Supports up to 8 LocalTalk devices.

Print Server Adapter Manufacturers

Print Server Adapters

Company	Product Number*	Network Operating Systems Supported	Network Topology	Printer Ports	Comments
Digital Products, Inc. www.digiprod.com	NETPrint 10E/N	NetWare (bindery emulation only.)	10BaseT	1 Parallel	$275.
	NETPrint 500E/N	NetWare, Win NT, UNIX, Apple.	10BaseT	1 Parallel	$299..
	NETPrint 500E/B	Win NT, UNIX.	10BaseT	1 Parallel	$529.
	NETPrint 500T	NetWare, Win NT, UNIX, Apple.	Token Ring	1 Parallel	$469..
	NETPrint 500T/B	Win NT, UNIX.	Token Ring	1 Parallel	$599.
	NETPrint 510E/N	NetWare, Win NT, UNIX, Apple.	BNC	1 Parallel	$299.
	NETPrint 510E/B	Win NT, UNIX.	BNC	1 Parallel	$529.
	NETPrint 1000E/D	NetWare, Win NT, UNIX, LAT	10BaseT & 2	2 Parallel 1 Serial	$499.

*Additional NETPrint products are available. Consult the manufacturer's catalog.

Glossary of Network Terms

AppleTalk
The proprietary network operating system used by Apple Computer Inc. LocalTalk and EtherTalk networks.

ASCII
Acronym for American Standard Code for Information Interchange. ASCII is a 7-bit code set commonly used for data representation in computers and on communication lines. For example, when you type the letter A, the computer stores the keystroke as ASCII hex value 41. The monitor or printer electronics decodes ASCII hex 41 and displays the letter A on the monitor or prints it.

Banyan Vines
Banyan Systems is a company that sells the proprietary Vines network operating system.

Bridge
A device that connects two homogeneous local area networks.

"Dumb" Terminal
A "dumb" input/output device is a combination of a keyboard and monitor able to communicate with a remote computer across a network, but has no computing power of its own. All of the computing is performed by the network host computer, typically a mainframe or mini-computer.

Ethernet
A type of high-speed LAN originated by DEC, Intel Corp., and Xerox Corp. and evolved by the Institute of Electrical and Electronics Engineers into a family of LAN standards.

EtherTalk
A form of Ethernet specific to Apple Macintosh networks. It uses the AppleTalk network operating system.

File Server
A data storage device, usually a hard disk drive, accessible by users, on which files are stored. Stored files typically consist of applications, documents, and images.

Gateway
A device that connects two heterogeneous systems by performing appropriate protocol and format conversions at all or most layers of the network architecture.

IBM LAN Server
IBM is a company that sells the proprietary LAN Server network operating system.

LAN
An acronym for Local Area Network. The term is generally used to refer to a general-purpose network in a limited geographic area that can serve a wide variety of devices. LANs support mainframe, mini, and micro computers, "dumb" terminals, and other peripherals, such as printers. In many cases, these networks can also carry not only data, but voice, video, and graphics. Your telephone is connected to a voice LAN. If you have cable, your television is connected to a video LAN.

LocalTalk
A low-speed LAN specific to Apple Macintosh networks. It uses the AppleTalk network operating system.

Mainframe
A very expensive computer that fills a large room.

Microcomputer
An inexpensive computer that fits on a desktop. Personal computers (PCs) and notebook computers are microcomputers.

Microsoft LAN Manager
Microsoft Corporation is a company that sells the proprietary LAN Manager network operating system.

Minicomputer
A computer bigger and more expensive than a microcomputer, but smaller and less expensive than a mainframe.

Network
A collection of computers that are connected together in a way that enables them to communicate with each other.

Network Architecture
An overall framework for data communication that includes protocols for all aspects of communication, from the physical cabling to the application that performs the desired function for the user.

Network File Server
A file server that is accessible to anyone on the network. Networks may have multiple file servers. In addition to files found on other file servers, network file servers may have an electronic mailbox for every user and may have a print queue (space reserved for storing a line of jobs waiting to print) for each printer on the network.

Network Operating System
A control program that manages communication on a network. It may be built into a computer operating system, such as Unix and Macintosh, or it may be dedicated solely to networking as in Netware, Vines, Lan Manager, and LAN Server.

Novell NetWare
Novell is a company that sells the proprietary NetWare network operating system.

Operating System
A control program that manages the memory, file system, and processor activity in a complex computer system. The operating system for IBM PC and compatible computers is currently DOS (Disk Operating System).

PCL
An acronym for Printer Control Language. PCL is a proprietary language for controlling printers manufactured by Hewlett Packard, used in its printers and emulated by most general-purpose laser printers.

PostScript
Adobe Systems, Inc. powerful, proprietary language for describing pages. PostScript is widely used or emulated in laser printers, color printers, and image setters for printing the highest-quality hard copy.

Print Server
A device used to connect a printer to a network when the printer itself cannot be connected directly to the network. The printer server functions as the network interface for the printer, detecting when the printer is ready for the next job, requesting the next print job from the network file server print queue and buffering the print data. It also informs the network print manager when the printer needs attention.

A print server may range from an outdated PC-AT with a network expansion card and running a network print server software and connected to a printer's parallel port to compact, low-cost print server adapters, which provide greater flexibility in printer location. Compact, moderate-cost gateway adapters provide additional flexibility for connecting printers.

Print Server Adapter
A compact, low-cost device that attaches to a serial or parallel port on a printer and connects it to a network. The combination functions as a network printer and can be located anywhere because the total footprint (desk space occupied) is little more than that of the printer. These devices are not universal; they must be selected with care to ensure they will physically connect to both the printer and network and that they will communicate successfully with both printer and network.

Protocol
A set of rules for communicating data.

Router
A device used to connect two unlike networks by performing required protocol and format conversions at the network layer and below.

SNMP
An acronym for Systems Network Management Protocol. A set of rules for communicating device management messages over a network.

TCP/IP
An acronym for Transmission Control Protocol/Internet Protocol. TCP/IP is a protocol that was developed in the U.S. Department of Defense community for communication among multiple vendors' computers across dissimilar networks. TCP enables communication among multiple vendors' computers. IP enables simple inter-networking for multiple vendors' computers connected across multiple networks.

Token Ring
A ring-shaped local area network that uses an access technique called token passing.

Unix
A computer operating system that has built-in networking capabilities. Unix has evolved many proprietary versions. Some examples are IBM, AIX, DEC Ultrix, Apple AUX, Sun Unix, Santa Cruz Operation SCO Unix.

Workstation
An unusually high-powered desktop computer. The computing power is usually specified in esoteric terms, such as megaflops, whetstones, and dhrystones. Characterized by a high-powered microprocessor (often of RISC architecture), huge RAM and hard disk capacities, and an Ethernet network connection, workstations represent the maximum computing power available in a desktop package at any given point in time. Since technology evolves, a 1994 mainstream desktop PC has roughly the same capabilities as a 1990 workstation.

SC7000
Common Questions and Answers

What is shipped standard with the SC7000?

- Parallel Cable
- Risograph Cable (also known as a Video or SC II Cable)
- Power Cord
- User and Technical Administrator Manuals
- CD-ROM Installer (contains printer drivers, ppd's, utility program, fonts, and TWAIN drivers)

What if my customer does not have a CD-ROM drive to install the necessary software?

3.5" diskettes can be ordered from RISO Customer Service.

Which PC's can be used with the SC7000?

PC's running Windows 3.X, Windows 95, Windows for Workgroups 3.11, and MS-DOS.

Which Macintoshes can be used with the SC7000?

Macintoshes that use the operating system version 7.5 or higher.

How fast can the SC7000 print a file?

It depends on the size and complexity of the file, but because of the SC7000's Pentium class processor and Ethernet port, files will print significantly faster than they did on the CI300.

Can the SC7000 be used with platforms other than the PC or Macintosh?

It may be possible, however, RISO has not tested the SC7000 with others.

How many fonts can be stored in a 300 MB hard drive?

Scaleable fonts vary in size, but assuming the average font size is 30 KB, approximately 10,000 fonts can be stored on the hard drive. (300 MB = 300,000 KB divided by 30 KB=10,000)

Can HP font cartridges be used with the SC7000?

No, because the SC7000 has no cartridge slot.

Can HP downloadable software fonts be used with the SC7000?

Yes.

The SC7000 comes standard with 16 MB of memory, but is expandable to 64 MB. When is it necessary to expand the memory?

PostScript and PCL handle memory differently. The 16 MB standard memory is all PostScript uses, so upgrading will be of no benefit. However, PCL can use unlimited amounts of memory, therefore, adding memory will allow you to print complex pages that would take a long time to process.

What happens if the correct ROMs are not installed in the Risograph?

It will not print.

Which printer driver do you use with the SC7000?

The RISO Printer Driver (Adobe PS Printer).

Will the SC7000 print from a Unix system?

It may work, however, RISO does not provide Unix printer drivers, and therefore does not support it.

Can the SC7000 print Autocad files?

Yes, if it is used with the operating systems for which we provide printer drivers. It will also work with a DOS version of Autocad if printing to the LaserJet III printer driver.

Can the new SC7000 Risograph ROMs be used when printing to the SC3000 and the CI300?

They can be used for the SC3000, but not for the CI300.

How far can the SC7000 be from the Risograph?

The Risograph cable is 32.5 feet long, so that is as far away as it can be.

Will a longer cable slow down the SC7000 processing speed?

No.